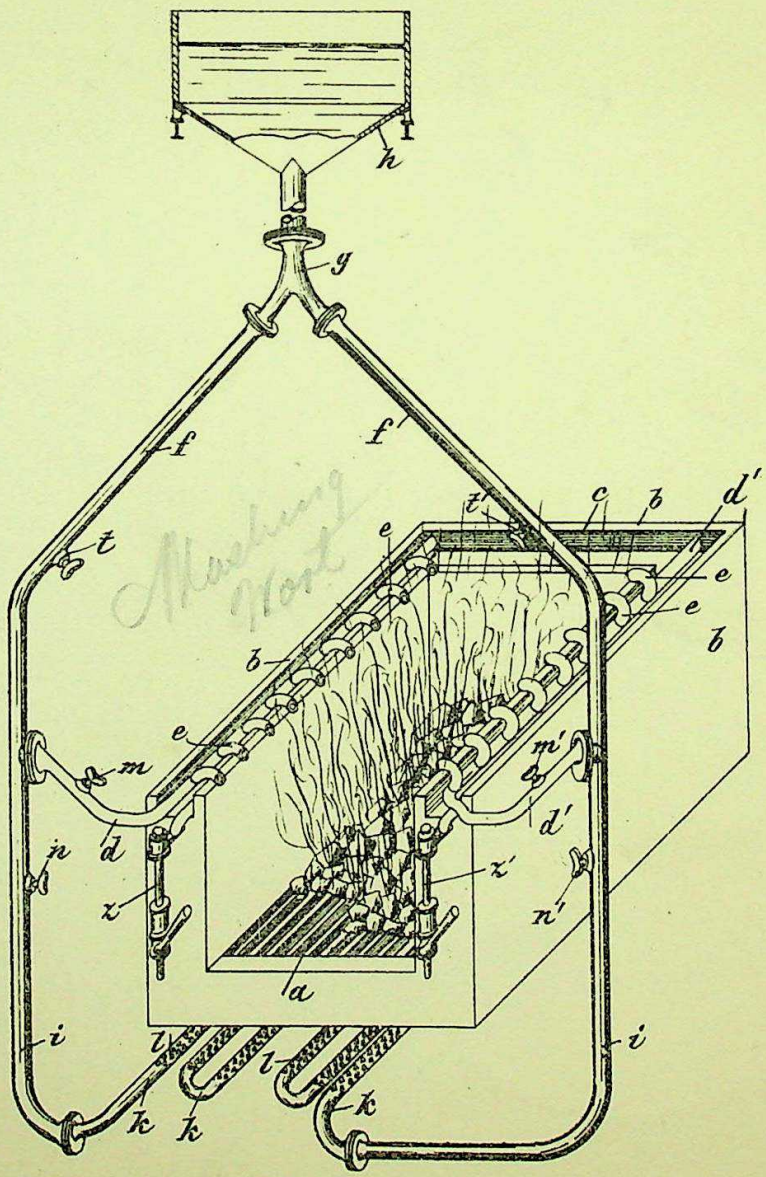
A.D. 1895. Nov. 6. Nº. 20,997.

KUHLMANN'S COMPLETE SPECIFICATION. (1 SHEET)



[This Drawing is a reproduction of the Original on a reduced scale]

N° 20,997 A.D. 1895

Date of Application, 6th Nov., 1895—Accepted, 18th Jan., 1896

COMPLETE SPECIFICATION.

Improvements in Brewing, and Apparatus therefor.

I, SIMON KUHLMANN, of 131, Charlottenstrasse, Höxter on the Weser, in the Empire of Germany, Brewer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

It has long been recognised as an evil that beer when it is ready for sending out and has stood some time in the casks, easily becomes cloudy, and this cloudiness considerably injures the quality of the beer.

The object of my invention is to provide a simple and sure method of obviating this inconvenience.

My invention is based upon the discovery that the clouding of the beer arises from over-heating during the treatment in the brew pan, and that the cloudiness does not occur when this over-heating of the wort is avoided in time.

My new process consists essentially in cooling down the fire which is acting upon the material whenever requisite to avoid overheating which can either be done by means of water or cold air.

In carrying my process into effect the arrangement illustrated in the accompanying drawing is preferably made use of. The heating surface *a* underneath the brew pan is surrounded on three sides by an earthenware or firebrick lining *b* whilst the fourth wall formed by the firing door has been omitted for the sake of clearness. In the upper part *c* formed in the shape of a flue in the earthenware walls are two pipes *d* d^1 which are both carried around all three walls and are provided at both longitudinal sides with outlets *e* for the purpose hereinafter described. The pipes *d* d^1 branch off from tubes *f* which come together at *g* and lead to a water or compressed air reservoir placed at a suitable height.

The tubes *f* have under the tubes *d* a branch *i* to which the coiled tubes *k* connect which lie underneath the fire bars. These tubes *k* are provided with projecting openings *l*. If the cocks *t* t^1, *m* m^1 and *n* n^1 be opened the water which is in the reservoir *a* can escape into the tubes *d* d^1 as well as into the tubes *i* and *k*; the consequence of this is that as soon as these cocks are opened water is discharged through the openings *e* from above upon the fire and damps it down. The water discharged from the openings *l* is so controlled that it only rises up a little way towards the lower surface of the firebars, and then falls in a curve upon the ashes lying under the same. Hereby the lower surface of the bars and the fire altogether is cooled from below without allowing the water to touch the fire bars. The tubes *d* d^1 terminate respectively in water guages *z* z^1 so that the operator can at any time see whether sufficient water is present or not. It is obvious that the cooling and damping down of the fire could also without difficulty be effected by means of a bellows or a current of air of any kind which can act from above and below through the tubes *d* and *i* upon the fire and cool down the same at the proper time. For the same purpose it could be arranged that air be driven by a pump into an air chamber and the same be supplied therefrom to the tubes *d* and *i*. It should be also mentioned that the bars can sometimes advantageously be cooled from above or from below only. In addition to the important advantage secured hereby, that the wort is not over-heated and a subsequent clouding is avoided, my process also has the advantage that a large saving of fuel estimated at 40 % is obtained. This surprising result is explicable by the fact that the coal is usually converted into coke and in this condition is capable of again giving a very considerable heating effect.

[*Price* 8*d*.]

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is :—

1. A process for the treating of wort characterised by cooling down the fire acting upon the same at the requisite time so as to avoid over-heating and thereby causing subsequent cloudiness of the beer.

2. The method of carrying into effect the process indicated in Claim 1 which consists in irrigating the fire from above at the proper time by water whilst underneath the fire a cooling is effected by means of water sprays which do not come in contact with the bars.

3. In the process described in Claim 2 the replacing of the water under pressure by air under pressure.

Dated this 6th day of November 1895.

W. P. THOMPSON & Co.,
31, High Holborn, London, W.C., Patent Agents for the Applicant.

London : Printed for Her Majesty's Stationery Office, by Darling & Son, Ltd.—1896